

AMENDED ENVIRONMENTAL COMPLIANCE APPROVAL

NUMBER 9225-BUKJNN

Issue Date: December 15, 2020

Greenfield Global Inc.
275 Bloomfield Road
Chatham, Ontario
N7M 5J5

Site Location: 275 Bloomfield Road
Chatham-Kent Municipality
N7M 5J5

*You have applied under section 20.2 of Part II.1 of the Environmental Protection Act ,
R.S.O. 1990, c. E. 19 (Environmental Protection Act) for approval of:*

Description Section

A fuel grade and industrial ethanol production facility, consisting of the following processes, equipment and support units:

- grain receiving, handling and milling;
- mash cooking;
- fermentation;
- distillation and dehydration;
- liquids and solids separation;
- evaporation;
- corn oil extraction;
- distillers grain recovery;
- product storage and transportation;
- cooling towers;
- Cogeneration Facility 1:
 - one (1) natural gas fired combustion turbine producing 4.65 megawatts of electrical power at 51.59 gigajoules per hour maximum thermal input, equipped with natural gas fired auxiliary burners having 92.2 gigajoules per hour maximum thermal input, and equipped with one (1) heat recovery steam generator providing 35,000 kilograms per hour of steam, discharging to the air through a stack designated as source S-10A as described in the *Original ESDM Report*;

- Cogeneration Facility 2:
 - one (1) natural gas fired combustion turbine producing 5.25 megawatts of electrical power at 54.8 gigajoules per hour maximum thermal input, equipped with natural gas fired auxiliary burners having 54.7 gigajoules per hour maximum thermal input, and equipped with one (1) heat recovery steam generator providing 38,000 kilograms per hour of steam, discharging to the air through stacks designated as source S-9A and S-9B as described in the *Original ESDM Report*;
 - one (1) process boiler fired by natural gas or No. 2 fuel oil, rated at 123 gigajoules per hour maximum thermal input, and discharging to the air through a stack designated as source S-10B as described in the *Original ESDM Report*;
 - one (1) process boiler fired by natural gas or No. 2 fuel oil, rated at 124 gigajoules per hour maximum thermal input, and discharging to the air through a stack designated as source S-10C as described in the *Original ESDM Report*;
 - two (2) steam-fired integral thermal oxidizers, each serving a dryer and rated at approximately 59 gigajoules per hour, discharging to the air through a stack designated as source S-13A or S-13B as described in the *Original ESDM Report*;

including the *Equipment* and any other ancillary and support processes and activities, operating at a *Facility Production Limit* of up to **227 million litres per year of anhydrous ethanol** and discharging to the air as described in the *Original ESDM Report*.

For the purpose of this environmental compliance approval, the following definitions apply:

1. "*ACB list*" means the document entitled "Air Contaminants Benchmarks (ACB) List: Standards, guidelines and screening levels for assessing point of impingement concentrations of air contaminants", as amended from time to time and published by the *Ministry* and available on a Government website;
2. "*Acceptable Point of Impingement Concentration*" means a concentration accepted by the *Ministry* as not likely to cause an adverse effect for a *Compound of Concern* that,
 - a. is not identified in the *ACB list*, or
 - b. is identified in the *ACB list* as belonging to the category "Benchmark 2" and has a concentration at a *Point of Impingement* that exceeds the concentration set out for the contaminant in that document.

With respect to the *Original ESDM Report*, the *Acceptable Point of Impingement Concentration* for a *Compound of Concern* mentioned above is the concentration set out in the *Original ESDM Report*;

3. "*Acoustic Assessment Report*" means the report, prepared in accordance with *Publication NPC-233* and Appendix A of the *Basic Comprehensive User Guide*, by Gillian Redman, MSc., P.Eng. of RWDI Air Inc. and dated July 13, 2020 submitted in support of the application, that documents all sources of noise emissions and *Noise Control Measures* present at the *Facility*, as updated in accordance with Condition 5 of this *Approval*;
4. "*Acoustic Assessment Summary Table*" means a table prepared in accordance with the *Basic Comprehensive User Guide* summarising the results of the *Acoustic Assessment Report*, as updated in accordance with Condition 5 of this *Approval*;
5. "*AERMOD*" means the dispersion model developed by the American Meteorological Society/U.S. Environmental Protection Agency Regulatory Model Improvement Committee (AERMIC) including the PRIME (Plume Rise Model Enhancement) algorithm, used to calculate one-hour average concentrations of a contaminant at the *Point of Impingement* and at the most impacted *Sensitive Receptor*.
6. "*Approval*" means this entire Environmental Compliance Approval and any *Schedules* to it;
7. "*Basic Comprehensive User Guide*" means the *Ministry* document titled "Basic Comprehensive Certificates of Approval (Air) User Guide" dated March 2011, as amended;
8. "*Best Management Practices Plan*" means a document or set of documents which describe measures to minimize dust and odour emissions from the *Facility* and/or *Equipment*.
9. "*Cogeneration Facility 1*" means the natural gas fired combustion turbine, heat recovery steam generator, and natural gas fired auxiliary burner which discharge to the air through a stack identified as source S-10A as described in the *Original ESDM Report*.
10. "*Cogeneration Facility 2*" means the natural gas fired combustion turbine, heat recovery steam generator, and natural gas fired auxiliary burner which discharge to the air through stacks identified as source S-9A and source S-9B as described in the *Original ESDM Report*.
11. "*Company*" means Greenfield Global Inc. that is responsible for the construction or operation of the *Facility* and includes any successors and assigns in accordance with section 19 of the *EPA*;

12. "*Compound of Concern*" means a contaminant described in paragraph 4 subsection 26 (1) of *O. Reg. 419/05*, namely, a contaminant that is discharged from the *Facility* in an amount that is not negligible;
13. "*Date of Commissioning*" means the first day on which each respective integral thermal oxidizer is commissioned by the *Company* ;
14. "*Description Section*" means the section on page one of this *Approval* describing the *Company's* operations and the *Equipment* located at the *Facility* and specifying the *Facility Production Limit* for the *Facility*;
15. "*Director*" means a person appointed for the purpose of section 20.3 of the *EPA* by the *Minister* pursuant to section 5 of the *EPA*;
16. "*District Manager*" means the District Manager of the appropriate local district office of the *Ministry*, where the *Facility* is geographically located;
17. "*Emission Summary Table*" means a table described in paragraph 14 of subsection 26 (1) of *O. Reg. 419/05*;
18. "*Environmental Assessment Act*" means the Environmental Assessment Act, R.S.O. 1990, c.E.18, as amended;
19. "*EPA*" means the Environmental Protection Act, R.S.O. 1990, c.E.19, as amended;
20. "*Equipment*" means equipment or processes described in the *ESDM Report*, this *Approval* and in the *Schedules* referred to herein and any other equipment or processes;
21. "*Equipment with Specific Operational Limits*" means *Cogeneration Facility 1*, *Cogeneration Facility 2*, the process boilers identified as source S-10B and source S-10C in the *Original ESDM Report*, the integral thermal oxidizers serving the dryers and discharging through the stack identified as S-13A or S-13B in the *Original ESDM Report*, and any *Equipment* related to the thermal oxidation of waste or waste derived fuels, fume incinerators or any other *Equipment* that is specifically referenced in any published *Ministry* document that outlines specific operational guidance that must be considered by the *Director* in issuing an *Approval*.
22. "*ESDM Report*" means the most current Emission Summary and Dispersion Modelling Report that describes the *Facility*. The *ESDM Report* is based on the *Original ESDM Report* and is updated after the issuance of this *Approval* in accordance with section 26 of *O. Reg. 419/05* and the *Procedure Document*;
23. "*Facility*" means the entire operation located on the property where the *Equipment* is located;
24. "*Facility Production Limit*" means the production limit placed by the *Director* on the

main product(s) or raw materials used by the *Facility*;

25. "*Fuel Flow Rate*" means flow rate of the fuel, expressed in cubic metres per second at standard temperature and pressure, or kilograms per second.
26. "*Heat Output*" means the total useful heat energy recovered from the combustion turbine as heat, expressed in megawatts.
27. "*Log*" means a document that contains a record of each change that is required to be made to the *ESDM Report* and *Acoustic Assessment Report*, including the date on which the change occurred. For example, a record would have to be made of a more accurate emission rate for a source of contaminant, more accurate meteorological data, a more accurate value of a parameter that is related to a source of contaminant, a change to a *Point of Impingement* and all changes to information associated with a *Modification* to the *Facility* that satisfies Condition 2;
28. "*Lower Heating Value*" means the energy released during combustion of the fuel, excluding the latent heat content of the water vapour component of the products of combustion, expressed in megajoules per cubic metre at standard temperature and pressure, or megajoules per kilogram.
29. "*Manager*" means the Manager, Technology Standards Section, Technical Assessment and Standards Development Branch, or any other person who represents and carries out the duties of the Manager, Technology Standards Section, Technical Assessment and Standards Development Branch, as those duties relate to the conditions of this *Approval*.
30. "*Minister*" means the Minister of the Environment, Conservation and Parks or such other member of the Executive Council as may be assigned the administration of the *EPA* under the Executive Council Act;
31. "*Ministry*" means the ministry of the *Minister*;
32. "*Modification*" means any construction, alteration, extension or replacement of any plant, structure, equipment, apparatus, mechanism or thing, or alteration of a process or rate of production at the *Facility* that may discharge or alter the rate or manner of discharge of a *Compound of Concern* to the air or discharge or alter noise or vibration emissions from the *Facility*;
33. "*O. Reg. 419/05*" means Ontario Regulation 419/05, Air Pollution – Local Air Quality, as amended;
34. "*Odour Objective*" means the maximum 10-minute average concentration of odour measured at the most impacted *Sensitive Receptor*, computed in accordance with Schedule D, resulting from the operation of the *Facility*, including fugitive emissions, of not greater than 1.0 *Odour Unit* under all atmospheric conditions;
35. "*Odour Unit*" means the number of unit volumes of odourless gas required to dilute

one unit volume of odorous gas to reach the odour threshold;

36. "*Original ESDM Report*" means the Emission Summary and Dispersion Modelling Report which was prepared in accordance with section 26 of *O. Reg. 419/05* and the *Procedure Document* by Jessica Orange & Brad Bergeron of RWDI Air Inc., and dated January 13, 2020, submitted in support of the application, and includes any changes to the report made up to the date of issuance of this *Approval*;
37. "*Point of Impingement*" has the same meaning as in section 2 of *O. Reg. 419/05*;
38. "*Point of Reception*" means Point of Reception as defined by *Publication NPC-300* ;
39. "*Power Output*" means the electricity and shaft power production of the combustion turbine, expressed in megawatts;
40. "*Pre-Test Plan*" means a plan for the *Source Testing* including the information required in Section 5 of the *Source Testing Code*;
41. "*Procedure Document*" means *Ministry* guidance document titled "Procedure for Preparing an Emission Summary and Dispersion Modelling Report" dated March 2018, as amended;
42. "*Processes with Significant Environmental Aspects*" means the *Equipment* which, during regular operation, would discharge one or more contaminants into the air in an amount which is not considered as negligible in accordance with section 26 (1) 4 of *O. Reg. 419/05* and the *Procedure Document*;
43. "*Publication NPC-207*" means the *Ministry* draft technical publication "Impulse Vibration in Residential Buildings", November 1983, supplementing the Model Municipal Noise Control By-Law, Final Report, published by the *Ministry*, August 1978, as amended;
44. "*Publication NPC-233*" means the *Ministry* Publication NPC-233, "Information to be Submitted for Approval of Stationary Sources of Sound", October, 1995, as amended;
45. "*Publication NPC-300*" means the *Ministry* Publication NPC-300, "Environmental Noise Guideline, Stationary and Transportation Sources – Approval and Planning, Publication NPC-300", August 2013, as amended;
46. "*Schedules*" means the following schedules attached to this *Approval* and forming part of this *Approval* namely:
 - Schedule A - Supporting Documentation
 - Schedule B - Targeted Sources & Test Contaminants
 - Schedule C - Source Testing Procedures
 - Schedule D - Procedure for Calculating Odour Point of Impingement

Concentration

- Schedule E - Cogeneration Facility Emission Limits
- Schedule F - Calculation of Thermal Efficiency of Cogeneration Facility
- Schedule G - Continuous Temperature Monitor & Data Recorder;

47. "*Sensitive Receptor*" means any location where there are human activities such as residences, nursing homes, daycare facilities, hospitals, schools, parklands, recreational facilities, play grounds, commercial plazas and office buildings.
48. "*Source Testing*" means site-specific sampling and testing to measure emissions resulting from operating the *Targeted Sources* under operating conditions that will derive an emission rate that, for the relevant averaging period of the contaminant, is at least as high as the maximum emission rate that the source of contaminant is reasonably capable of, or a rate approved by the *Manager* within the approved operating range of the *Targeted Sources* which satisfies paragraph 1 of subsection 11(1) of O. Reg. 419/05;
49. "*Source Testing Code*" means the Ontario Source Testing Code, dated June 2010, prepared by the *Ministry*, as amended;
50. "*Targeted Sources*" means the sources listed in Schedule B;
51. "*Test Contaminants*" means the contaminants listed in Schedule B;
52. "*Toxicologist*" means a qualified professional currently active in the field of risk assessment and toxicology that has a combination of formal university education, training and experience necessary to assess contaminants; and
53. "*Written Summary Form*" means the electronic questionnaire form, available on the *Ministry* website, and supporting documentation, that documents the activities undertaken at the *Facility* in the previous calendar year.

You are hereby notified that this environmental compliance approval is issued to you subject to the terms and conditions outlined below:

TERMS AND CONDITIONS

1. GENERAL

1. Except as otherwise provided by this *Approval*, the *Facility* shall be designed, developed, built, operated and maintained in accordance with the terms and conditions of this *Approval* and in accordance with the following *Schedules* attached hereto:

- Schedule A - Supporting Documentation
- Schedule B - Targeted Sources & Test Contaminants
- Schedule C - Source Test Procedures
- Schedule D - Procedure for Calculating Odour Point of Impingement Concentration
- Schedule E - Cogeneration Facility Emission Limits
- Schedule F - Calculation of Thermal Efficiency of Cogeneration Facility
- Schedule G - Continuous Temperature Monitor & Data Recorder

2. LIMITED OPERATIONAL FLEXIBILITY

1. Pursuant to section 20.6 (1) of the *EPA* and subject to Conditions 2.2 and 2.3 of this *Approval*, future construction, alterations, extensions or replacements are approved in this *Approval* if the future construction, alterations, extensions or replacements are *Modifications* to the *Facility* that:
 - a. are within the scope of the operations of the *Facility* as described in the *Description Section* of this *Approval*;
 - b. do not result in an increase of the *Facility Production Limit* above the level specified in the *Description Section* of this *Approval*; and
 - c. result in compliance with the performance limits as specified in Condition 4.
2. Condition 2.1 does not apply to,
 - a. the addition of any new *Equipment with Specific Operational Limits* or to the *Modification* of any existing *Equipment with Specific Operational Limits* at the *Facility*; and
 - b. *Modifications* to the *Facility* that would be subject to the *Environmental Assessment Act*.
3. Condition 2.1 of this *Approval* shall expire ten (10) years from the date of this *Approval*, unless this *Approval* is revoked prior to the expiry date. The *Company* may apply for renewal of Condition 2.1 of this *Approval* by including an *ESDM Report* and an *Acoustic Assessment Report* that describes the *Facility* as of the date of the renewal application.

3. REQUIREMENT TO REQUEST AN ACCEPTABLE POINT OF IMPINGEMENT CONCENTRATION

1. Prior to making a *Modification* to the *Facility* that satisfies Condition 2.1.a. and 2.1.b., the *Company* shall prepare a proposed update to the *ESDM Report* to reflect the proposed *Modification*.

2. The *Company* shall request approval of an *Acceptable Point of Impingement Concentration* for a *Compound of Concern* if the *Compound of Concern* is not identified in the *ACB list* as belonging to the category “Benchmark 1” and a proposed update to an *ESDM Report* indicates that one of the following changes with respect to the concentration of the *Compound of Concern* may occur:
 - a. The *Compound of Concern* was not a *Compound of Concern* in the previous version of the *ESDM Report* and
 - i. the concentration of the *Compound of Concern* exceeds the concentration set out for the contaminant in the *ACB list*; or
 - ii. the *Compound of Concern* is not identified in the *ACB list*; or
 - b. The concentration of the *Compound of Concern* in the updated *ESDM Report* exceeds the higher of,
 - i. the most recent *Acceptable Point of Impingement Concentration*, and
 - ii. the concentration set out for the contaminant in the *ACB list*, if the contaminant is identified in that document.
3. The request required by Condition 3.2 shall propose a concentration for the *Compound of Concern* and shall contain an assessment, performed by a *Toxicologist*, of the likelihood of the proposed concentration causing an adverse effect at *Points of Impingement*.
4. If the request required by Condition 3.2 is a result of a proposed *Modification* described in Condition 3.1, the *Company* shall submit the request, in writing, to the *Director* at least 30 days prior to commencing to make the *Modification*. The *Director* shall provide written confirmation of receipt of this request to the *Company*.
5. If a request is required to be made under Condition 3.2 in respect of a proposed *Modification* described in Condition 3.1, the *Company* shall not make the *Modification* mentioned in Condition 3.1 unless the request is approved in writing by the *Director*.
6. If the *Director* notifies the *Company* in writing that the *Director* does not approve the request, the *Company* shall,
 - a. revise and resubmit the request; or
 - b. notify the *Director* that it will not be making the *Modification*.
7. The re-submission mentioned in Condition 3.6 shall be deemed a new submission under Condition 3.2.

8. If the *Director* approves the request, the *Company* shall update the *ESDM Report* to reflect the *Modification*.
9. Condition 3 does not apply if Condition 2.1 has expired.

4. PERFORMANCE LIMITS

1. Subject to Condition 4.2, the *Company* shall not discharge or cause or permit the discharge of a *Compound of Concern* into the air if,
 - a. the *Compound of Concern* is identified in the *ACB list* as belonging to the category "Benchmark 1" and the discharge results in the concentration at a *Point of Impingement* exceeding the Benchmark 1 concentration; or
 - b. the *Compound of Concern* is not identified in the *ACB list* as belonging to the category "Benchmark 1" and the discharge results in the concentration at a *Point of Impingement* exceeding the higher of,
 - i. if an *Acceptable Point of Impingement Concentration* exists, the most recent *Acceptable Point of Impingement Concentration*, and
 - ii. the concentration set out for the contaminant in the *ACB list*, if the contaminant is identified in that document.
2. Condition 4.1 does not apply if the benchmark set out in the *ACB list* has a 10-minute averaging period and no ambient monitor indicates an exceedance at a *Point of Impingement* where human activities regularly occur at a time when those activities regularly occur.
3. The *Company* shall ensure that the noise emissions from the *Facility* comply with the limits set out in *Ministry Publication NPC-300*.
4. The *Company* shall ensure that the vibration emissions from the *Facility* comply with the limits set out in *Ministry Publication NPC-207*.
5. The *Company* shall operate any *Equipment with Specific Operational Limits* approved by this *Approval* in accordance with the *Original ESDM Report* and Condition 12 of this *Approval*.

5. FUGITIVE DUST & ODOUR BEST MANAGEMENT PRACTICES PLAN

1. The *Company* shall prepare, within one month of issuance of this *Approval*, a *Best Management Practices Plan* for the control of minor odour emissions, fugitive odour emissions and fugitive dust emissions to provide effective preventative/control measures to any potential sources of minor odour/fugitive emissions resulting from the operation of the *Facility*. *The Best Management Practices Plan* shall:
 - a. at minimum, be prepared in accordance with the *Ministry's* publication

"Technical Bulletin: Management Approaches for Industrial Fugitive Dust Sources" (as amended) and the *Ministry's* publication "Best Management Practices for Industrial Sources of Odour" (as amended);

b. include preventive and control measures intended to meet the *Odour Objective*.

2. The *Company* shall implement the *Best Management Practices Plan*.

3. The *Company* shall provide written documentation of specific preventative and control measures described in the *Best Management Practices Plan*.

The *Company* shall record, as a minimum:

a. the date when each new preventative measure or operating procedure to minimize emissions is implemented, including a description of the preventative measure or operating procedure; and

b. each periodic activity conducted to minimize emissions.

4. The *Company* shall update the *Best Management Practices Plan* as necessary or at the direction of the *District Manager*.

6. DOCUMENTATION REQUIREMENTS

1. The *Company* shall maintain an up-to-date *Log*.

2. No later than March 31 in each year, the *Company* shall update the *Acoustic Assessment Report* and shall update the *ESDM Report* in accordance with section 26 of *O. Reg. 419/05* so that the information in the reports is accurate as of December 31 in the previous year.

3. The *Company* shall make the *Emission Summary Table* (see section 27 of *O. Reg. 419/05*) and *Acoustic Assessment Summary Table* available for examination by any person, without charge, by posting it on the Internet or by making it available during regular business hours at the *Facility*.

4. The *Company* shall, within three (3) months after the expiry of Condition 2.1 of this *Approval*, update the *ESDM Report* and the *Acoustic Assessment Report* such that the information in the reports is accurate as of the date that Condition 2.1 of this *Approval* expired.

5. Conditions 6.1 and 6.2 do not apply if Condition 2.1 has expired.

7. REPORTING REQUIREMENTS

1. Subject to Condition 7.2, the *Company* shall provide the *Director* no later than June 30 of each year, a *Written Summary Form* to be submitted through the *Ministry's* website that shall include the following:

a. a declaration of whether the *Facility* was in compliance with section 9 of the *EPA, O. Reg. 419/05* and the conditions of this *Approval*;

b. a summary of each *Modification* satisfying Condition 2.1.a. and 2.1.b. that took place in the previous calendar year that resulted in a change in the previously calculated concentration at a *Point of Impingement* for any *Compound of Concern* or resulted in a change in the sound levels reported in the *Acoustic Assessment Summary Table* at any *Point of Reception*.

2. Condition 7.1 does not apply if Condition 2.1 has expired.

8. OPERATION AND MAINTENANCE

1. The *Company* shall prepare and implement, not later than three (3) months from the date of this *Approval*, operating procedures and maintenance programs for all *Processes with Significant Environmental Aspects*, which shall specify as a minimum:

- a. frequency of inspections and scheduled preventative maintenance;
- b. procedures to prevent upset conditions;
- c. procedures to minimize all fugitive emissions;
- d. procedures to prevent and/or minimize odorous emissions;
- e. procedures to prevent and/or minimize noise emissions; and
- f. procedures for record keeping activities relating to the operation and maintenance programs.

2. The *Company* shall ensure that all *Processes with Significant Environmental Aspects* are operated and maintained in accordance with this *Approval*, the operating procedures and maintenance programs.

9. COMPLAINTS RECORDING AND REPORTING

1. If at any time, the *Company* receives an environmental complaint from the public regarding the operation of the *Equipment* approved by this *Approval*, the *Company* shall take the following steps:

- a. Record and number each complaint, either electronically or in a log book. The record shall include the following information: the time and date of the complaint and incident to which the complaint relates, the nature of the complaint, wind direction at the time and date of the incident to which the complaint relates and, if known, the address of the complainant.
- b. Notify the *District Manager* of the complaint within two (2) business days after the complaint is received, or in a manner acceptable to the *District Manager*.
- c. Initiate appropriate steps to determine all possible causes of the

complaint, and take the necessary actions to appropriately deal with the cause of the subject matter of the complaint.

- d. Complete and retain on-site a report written within one (1) week of the complaint date. The report shall list the actions taken to appropriately deal with the cause of the complaint and set out steps to be taken to avoid the recurrence of similar incidents.

10. RECORD KEEPING REQUIREMENTS

1. Any information requested by any employee in or agent of the *Ministry* concerning the *Facility* and its operation under this *Approval*, including, but not limited to, any records required to be kept by this *Approval*, shall be provided to the employee in or agent of the *Ministry*, upon request, in a timely manner.
2. Unless otherwise specified in this *Approval*, the *Company* shall retain, for a minimum of five (5) years from the date of their creation all reports, records and information described in this *Approval*, including,
 - a. a copy of the *Original ESDM Report* and each updated version;
 - b. a copy of each version of the *Acoustic Assessment Report*;
 - c. supporting information used in the emission rate calculations performed in the *ESDM Reports* and *Acoustic Assessment Reports*;
 - d. the records in the *Log*;
 - e. all records related to the *Best Management Practices Plan* as required under Condition 5.3 of this *Approval*;
 - f. copies of each *Written Summary Form* provided to the *Ministry* under Condition 7.1 of this *Approval*;
 - g. records of maintenance, repair and inspection of *Equipment* related to all *Processes with Significant Environmental Aspects*;
 - h. all records related to environmental complaints made by the public as required by Condition 9 of this *Approval*;
 - i. all records related to the *Source Testing* required by Condition 11 of this *Approval*;
 - j. all records related to the *Thermal Efficiency* testing required by Condition 12.2 of this *Approval*.
 - k. all records related to the continuous temperature monitoring of the regenerative thermal oxidizers required by Condition 12.3.d of this *Approval*.

11. SOURCE TESTING

1. The *Company* shall perform *Source Testing* in accordance with the procedures in Schedule C and the dates listed in Schedule B, or dates agreed to by the *District Manager*, to determine the rates of emissions of the *Test Contaminants* from the *Targeted Sources* listed in Schedule B.

12. EQUIPMENT WITH SPECIFIC OPERATIONAL LIMITS

1. The *Company* shall ensure that *Cogeneration Facility 1* and *Cogeneration Facility 2* are designed and operated to comply with the following performance requirements:
 - a. The concentrations of nitrogen oxides and carbon monoxide in the undiluted gas emitted from the *Cogeneration Facility 1* stack and the *Cogeneration Facility 2* stack are not greater than their respective limits as specified in Schedule E attached to this *Approval*.
 - b. The *Thermal Efficiencies* of *Cogeneration Facility 1* and *Cogeneration Facility 2* are not less than the respective *Thermal Efficiencies* specified in Schedule E of this *Approval*.
2. The *Company* shall perform a test once every two (2) calendar years to determine the *Thermal Efficiency* of *Cogeneration Facility 1* and the *Thermal Efficiency* of *Cogeneration Facility 2*. The *Company* shall, as a minimum:
 - i. determine the parameters described in Schedule F, during the *Thermal Efficiency* testing for *Cogeneration Facility 1* and for *Cogeneration Facility 2*;
 - ii. calculate the *Thermal Efficiency* of *Cogeneration Facility 1* and of *Cogeneration Facility 2* according to the formula described in Schedule F; and
 - iii. prepare a summary of the results of the *Thermal Efficiency* testing no later than two (2) months after completing the test. The summary shall indicate the *Thermal Efficiency* of *Cogeneration Facility 1* and of *Cogeneration Facility 2* and include all parameters described in Schedule F.
 - iv. If the measured *Thermal Efficiency* is less than the anticipated *Thermal Efficiency* as specified in Schedule D of this *Approval* (with a tolerance of 0.05 multiplied by the anticipated *Thermal Efficiency*), the *Company* shall notify the *Ministry* so that the emission limits specified in Schedule E of this *Approval* can be revised accordingly.
3. The *Company* shall ensure that the integral thermal oxidizers are designed and operated to comply, at all times, with the following requirements:

- a. The combustion chamber of each integral thermal oxidizer shall be preheated to a minimum of 870 degrees Celsius, as measured by the continuous monitoring and recording system, prior to introducing grain feed into the dryer;
- b. The temperature in the combustion chamber of each integral thermal oxidizer is maintained at a minimum of 870 degrees Celsius, as measured by the continuous monitoring and recording system, at all times, when the integral thermal oxidizer is in operation;
- c. The residence time of the combustion gases in the combustion chamber of each integral thermal oxidizer shall not be less than 1.0 second at a minimum temperature of 870 degrees Celsius;
- d. The *Company* shall continuously monitor and record the operating temperature in the combustion chamber of each integral thermal oxidizer when the integral thermal oxidizer is in operation. The continuous temperature monitoring and recording system shall comply with the requirements outlined in Schedule G of this *Approval*.

13. REVOCATION OF PREVIOUS APPROVALS

1. This *Approval* replaces and revokes all Certificates of Approval (Air) issued under section 9 *EPA* and Environmental Compliance Approvals issued under Part II.1 *EPA* to the *Facility* in regards to the activities mentioned in subsection 9(1) of the *EPA* and dated prior to the date of this *Approval*.

SCHEDULE A

Supporting Documentation

1. Environmental Compliance Approval Application, dated January 16, 2020, signed by Veselin Nikolov, and submitted by the *Company*;
2. Emission Summary and Dispersion Modelling Report, prepared by Jessica Orange & Brad Bergeron of RWDI Air Inc. and dated January 13, 2020;
3. *Acoustic Assessment Report*, prepared by Gillian Redman, MSc., P.Eng. of RWDI Air Inc. and dated July 13, 2020;
4. Memoranda submitted by Brad Bergeron of RWDI Air Inc. dated August 5, 2020 and September 21, 2020;
5. Information provided via e-mail by Brad Bergeron of RWDI Air Inc. on December 7, 2020.

SCHEDULE B

Targeted Sources and Test Contaminants for Source Testing:

Targeted Source	Test Contaminants	Date
Stack S-13A	<ul style="list-style-type: none"> • odour • particulate matter • nitrogen oxides 10102-44-0 • carbon monoxide 630-08-0 • sulphur dioxide 7446-09-5 • acrolein 107-02-8 • benzene 71-43-2 	within three (3) months of the <i>Date of Commissioning</i> of each integral thermal oxidizer
<i>Cogeneration Facility 1 and Cogeneration Facility 2</i>	<ul style="list-style-type: none"> • nitrogen oxides 10102-44-0 • carbon monoxide 630-08-0 	By December 31, 2020, and then every two (2) calendar years thereafter

SCHEDULE C

Source Testing Procedures

1. The *Company* shall submit, not later than three (3) months prior to the *Source Testing*, to the *Manager* a *Pre-Test Plan* for the *Source Testing* required under this *Approval*. The *Company* shall finalize the *Pre-Test Plan* in consultation with the *Manager*.
2. The *Company* shall not commence the *Source Testing* required under this *Approval* until the *Manager* has approved the *Pre-Test Plan*.
3. The *Company* shall notify the *Manager*, the *District Manager* and the *Director* in writing of the location, date and time of any impending *Source Testing* required by this *Approval*, at least fifteen (15) days prior to the *Source Testing*.
4. The *Company* shall submit a report (electronic format) on the *Source Testing* to the *Manager*, the *District Manager* and the *Director* not later than three (3) months after completing the *Source Testing*. The report shall be in the format described in the *Source Testing Code*, and shall also include, but not be limited to:
 1. an executive summary;
 2. an identification of the applicable North American Industry Classification System code (NAICS) for the *Facility*;
 3. records of operating conditions at the time of *Source Testing*, including but not limited to the following:

- a. production data and equipment operating rate as a percentage of maximum capacity, for all processes and equipment discharging to the *Targeted Sources*;
 - b. *Facility/process* information related to the operation of the *Targeted Sources*;
 - c. description of the emission sources controlled by the *Targeted Sources* at the time of testing;
 - d. operational description of the general building ventilation at the time of testing;
 - e. any parameters necessary to verify compliance with the limits listed in Schedule E of this *Approval*, if applicable to the tested sources;
4. results of *Source Testing*, including the emission rate, emission concentration, and relevant emission factor of the *Test Contaminants* from the *Targeted Sources*;
 5. a tabular comparison of calculated emission rates and emission factors based on *Source Testing* results for the *Test Contaminants* to relevant estimates described in the *ESDM Report*; and
 6. a comparison of the *Source Testing* results to the concentration limits listed in Schedule E of this *Approval*, if applicable to the tested sources;
5. The *Director* may not accept the results of the *Source Testing* if:
1. the *Source Testing Code* or the requirement of the *Manager* were not followed;
 2. the *Company* did not notify the *Manager*, the *District Manager* and *Director* of the *Source Testing*; or
 3. the *Company* failed to provide a complete report on the *Source Testing*.
6. If the *Director* does not accept the result of the *Source Testing*, the *Director* may require re-testing. If re-testing is required, the *Pre-Test Plan* strategies need to be revised and submitted to the *Manager* for approval. The actions taken to minimize the possibility of the *Source Testing* results not being accepted by the *Director*

must be noted in the revision.

7. The *Company* shall update their *ESDM Report* in accordance with Section 26 of *O. Reg. 419/05* and the *Procedure Document* with the results from the *Source Testing*, not later than three (3) months after the submission of the *Source Testing* report and make these records available for review by staff of the *Ministry* upon request.

SCHEDULE D

Procedures for the Calculation of 10-minute Average Concentration of Odour CALCULATE ONE-HOUR AVERAGE CONCENTRATION

The one-hour average concentration of odour at the most impacted Sensitive Receptor shall be calculated using the detailed procedure described as follows:

1. Calculate one-hour average concentration of odour at the most impacted Sensitive Receptor at which the highest concentration occurs in employing *AERMOD* or another atmospheric dispersion model acceptable to the Director that employs at least five (5) years of hourly local meteorological data and that can provide results reported as individual one-hour average odour concentrations;
2. Convert each one-hour average concentrations predicted over the five (5) years of hourly local meteorological data to a 10-minute average concentration using the One-hour Average to 10-Minute Average Conversion described below; and
3. Record and present the 10-Minute Average concentrations predicted to occur over a five (5) year period at the Point of Impingement and at the most impacted Sensitive Receptor in a histogram. The histogram shall identify all predicted 10-minute average odour concentration occurrences in terms of frequency, identifying the number of occurrences over the entire range of predicted odour concentration in increments of not more than 1/10 of one odour unit. The maximum 10-minute average concentration of odour at the Sensitive Receptor will be considered to be the maximum odour concentration corresponding to 99.5% of the time in the 5 year modelling period at the most impacted Sensitive Receptor. If elimination of meteorological anomalies in accordance with the section 6.5 of the ministry's document titled "Air Dispersion Modelling Guideline for Ontario" dated February 2017, as amended, is considered before considering frequency, only those anomalies per year of meteorology over the full modelling grid as required under section 14 of *O. Reg. 419/05* shall be removed.
4. Use the following formula to convert and record one-hour average concentrations at the Point of Impingement and at the most impacted Sensitive Receptor to 10-minute average concentrations:

$$X_{10\text{min}} = X_{60\text{min}} * 1.65$$

where $X_{10\text{min}}$ = 10-minute average concentration

$X_{60\text{min}}$ = one-hour average concentration

(Equation: X Subscript 10 min Baseline equals X Subscript 60 min Baseline times 1.65, where X Subscript 10 min Baseline equals 10-minute average concentration and X Subscript 60 min Baseline equals one-hour average concentration.)

SCHEDULE E COGENERATION FACILITY LIMITS

COGENERATION FACILITY	PARAMETER	LIMIT
<i>Cogeneration Facility 1</i>	Nitrogen Oxides	87.5 ppmv ^{1,2}
	Carbon Monoxide	60.0 ppmv ¹
	Thermal Efficiency	80.9 percent ³
<i>Cogeneration Facility 2</i>	Nitrogen Oxides	41.4 ppmv ^{1,2}
	Carbon Monoxide	60.0 ppmv ¹
	Thermal Efficiency	89.4 percent ³

1. "ppmv" means parts per million by volume at Reference Conditions (ambient temperature at 15 degrees Celsius, 60 percent relative humidity and 101.3 kiloPascals barometric pressure) on a dry volume basis normalized to 15 percent oxygen.

2. "Nitrogen Oxides" means oxides of nitrogen, including nitric oxide (NO) and nitrogen dioxide (NO2).

3. The calculated *Thermal Efficiency* shall be converted to Reference Conditions.

SCHEDULE F

Thermal Efficiency Testing Procedures:

Parameters to be tested/measured:

1. *Power Output*
2. *Heat Output*
3. *Fuel Flow Rate*
4. *Lower Heating Value*
5. (a) Ambient air temperature (expressed in degrees of Celsius)
(b) Barometric pressure (expressed in kilopascal)
(c) Relative humidity (expressed in percent)
6. Date, time and duration of test

FORMULA:

(*Power Output* + *Heat Output*) x 100%

Thermal Efficiency = -----

Fuel Flow Rate x *Lower Heating Value*

NOTE:

Thermal Efficiency testing should be conducted at maximum rating or at the maximum load achievable at the time of testing and shall employ an averaging time of not less

than three hours.

SCHEDULE G

Continuous Temperature Monitor & Data Recorder

LOCATION:

The continuous temperature monitors shall be installed at accessible locations where the measurements are representative of the actual operating temperatures of the thermal oxidizers and are used to verify compliance of this *Approval*.

PERFORMANCE:

The continuous temperature monitor shall meet the following minimum performance specifications for the following parameters.

PARAMETERS	SPECIFICATION
Type	shielded "K" type thermocouple, or equivalent
Accuracy	+/- 5 degrees Celsius

DATA RECORDER:

The data recorder must be capable of registering continuously the measurement of the monitor without a significant loss of accuracy and with a time resolution of 1 minutes or better.

RELIABILITY:

The monitor and the recorder shall be operated and maintained so that accurate data is obtained during a minimum of 95 percent of the time for each calendar quarter.

The reasons for the imposition of these terms and conditions are as follows:

1. GENERAL

Condition No. 1 is included to require the *Approval* holder to build, operate and maintain the *Facility* in accordance with the Supporting Documentation in Schedule A considered by the *Director* in issuing this *Approval*.

2. LIMITED OPERATIONAL FLEXIBILITY, REQUIREMENT TO REQUEST AN ACCEPTABLE POINT OF IMPINGEMENT CONCENTRATION AND PERFORMANCE LIMITS

Conditions No. 2, 3 and 4 are included to limit and define the *Modifications* permitted by this *Approval*, and to set out the circumstances in which the *Company* shall request approval of an *Acceptable Point of Impingement Concentration* prior to making *Modifications*. The holder of the *Approval* is approved for operational flexibility for the *Facility* that is consistent with the description of the operations included with the application up to the *Facility Production Limit*. In return for the operational flexibility, the *Approval* places performance based limits that cannot be exceeded under the terms of this *Approval*. *Approval* holders will still have to obtain other relevant approvals required to operate the *Facility*, including requirements under other environmental legislation such as the *Environmental Assessment Act*.

3. **BEST MANAGEMENT PRACTICES PLAN**

Condition No. 5 is included to require the *Company* to develop and implement effective control measures to minimize fugitive and minor odour and dust emissions from all sources at the *Facility*.

4. **DOCUMENTATION REQUIREMENTS**

Condition No. 6 is included to require the *Company* to maintain ongoing documentation that demonstrates compliance with the performance limits as specified in Condition 4 of this *Approval* and allows the *Ministry* to monitor ongoing compliance with these performance limits. The *Company* is required to have an up to date *ESDM Report* and *Acoustic Assessment Report* that describe the *Facility* at all times and make the *Emission Summary Table* and *Acoustic Assessment Summary Table* from these reports available to the public on an ongoing basis in order to maintain public communication with regard to the emissions from the *Facility*.

5. **REPORTING REQUIREMENTS**

Condition No. 7 is included to require the *Company* to provide a yearly *Written Summary Form* to the *Ministry*, to assist the *Ministry* with the review of the site's compliance with the *EPA*, the regulations and this *Approval*.

6. **OPERATION AND MAINTENANCE**

Condition No. 8 is included to require the *Company* to properly operate and maintain the *Processes with Significant Environmental Aspects* to minimize the impact to the environment from these processes.

7. **COMPLAINTS RECORDING AND REPORTING PROCEDURE**

Condition No. 9 is included to require the *Company* to respond to any environmental complaints regarding the operation of the *Equipment*, according to a procedure that includes methods for preventing recurrence of similar incidents and a requirement to prepare and retain a written report.

8. **RECORD KEEPING REQUIREMENTS**

Condition No. 10 is included to require the *Company* to retain all documentation

related to this *Approval* and provide access to employees in or agents of the *Ministry*, upon request, so that the *Ministry* can determine if a more detailed review of compliance with the performance limits as specified in Condition 4 of this *Approval* is necessary.

9. **SOURCE TESTING**

Condition No. 11 is included to require the *Company* to gather accurate information so that the environmental impact and subsequent compliance with the *EPA*, the regulations and this *Approval* can be verified.

10. **EQUIPMENT WITH SPECIFIC OPERATIONAL LIMITS**

Condition No. 12 is included to provide the minimum performance requirement considered necessary to prevent an adverse effect resulting from the operation of the *Facility*.

11. **REVOCAION OF PREVIOUS APPROVALS**

Condition No. 13 is included to identify that this *Approval* replaces all Section 9 Certificate(s) of Approval and Part II.1 Approvals in regards to the activities mentioned in subsection 9(1) of the *EPA* and dated prior to the date of this *Approval*.

Upon issuance of the environmental compliance approval, I hereby revoke Approval No(s). 4671-9VJRWM issued on May 1, 2015.

In accordance with Section 139 of the Environmental Protection Act, you may by written Notice served upon me, the Environmental Review Tribunal and in accordance with Section 47 of the Environmental Bill of Rights, 1993, the Minister of the Environment, Conservation and Parks, within 15 days after receipt of this Notice, require a hearing by the Tribunal. The Minister of the Environment, Conservation and Parks will place notice of your appeal on the Environmental Registry. Section 142 of the Environmental Protection Act provides that the Notice requiring the hearing shall state:

- a. The portions of the environmental compliance approval or each term or condition in the environmental compliance approval in respect of which the hearing is required, and;
- b. The grounds on which you intend to rely at the hearing in relation to each portion appealed.

Pursuant to subsection 139(3) of the Environmental Protection Act, a hearing may not be required with respect to any terms and conditions in this environmental compliance approval, if the terms and conditions are substantially the same as those contained in an approval that is amended or revoked by this environmental compliance approval.

The Notice should also include:

1. The name of the appellant;

2. The address of the appellant;
3. The environmental compliance approval number;
4. The date of the environmental compliance approval;
5. The name of the Director, and;
6. The municipality or municipalities within which the project is to be engaged in.

And the Notice should be signed and dated by the appellant.

This Notice must be served upon:

The Secretary* Environmental Review Tribunal 655 Bay Street, Suite 1500 Toronto, Ontario M5G 1E5	AND	The Minister of the Environment, Conservation and Parks 777 Bay Street, 5th Floor Toronto, Ontario M7A 2J3	AND	The Director appointed for the purposes of Part II.1 of the Environmental Protection Act Ministry of the Environment, Conservation and Parks 135 St. Clair Avenue West, 1st Floor Toronto, Ontario M4V 1P5
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*** Further information on the Environmental Review Tribunal's requirements for an appeal can be obtained directly from the Tribunal at: Tel: (416) 212-6349, Fax: (416) 326-5370 or www.ert.gov.on.ca**

This instrument is subject to Section 38 of the Environmental Bill of Rights, 1993, that allows residents of Ontario to seek leave to appeal the decision on this instrument. Residents of Ontario may seek leave to appeal within 15 days from the date this decision is placed on the Environmental Registry. By accessing the Environmental Registry at <https://ero.ontario.ca/>, you can determine when the leave to appeal period ends.

The above noted activity is approved under s.20.3 of Part II.1 of the Environmental Protection Act.

DATED AT TORONTO this 15th day of December,
2020

Rudolf Wan, P.Eng.
Director
appointed for the purposes of Part
II.1 of the *Environmental
Protection Act*

NR/
c: Area Manager, MECP Windsor Area Office
c: District Manager, MECP Sarnia District Office
Brad Bergeron, RWDI Air Inc.